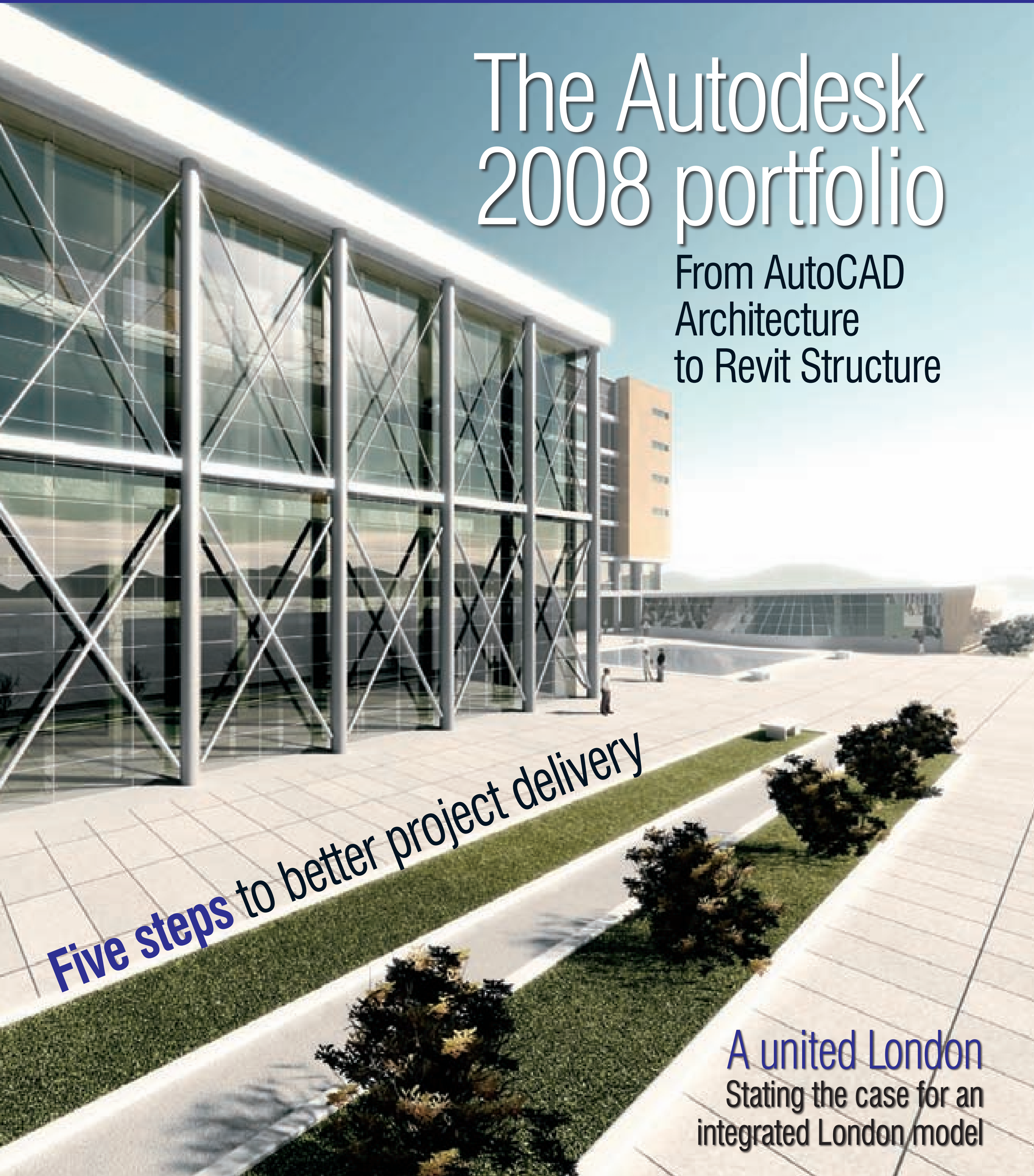
March/April 2007 >> Vol.30

AECMAGAZINE

DESIGN, MANAGEMENT & COLLABORATION IN THE BUILT ENVIRONMENT



The Autodesk 2008 portfolio

From AutoCAD Architecture to Revit Structure

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MCAD - January 2007



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Corsair has recently introduced the World's First Ultra Low Latency DDR2-800 CL3 Memory – the TWIN2X2048-6400C3. This sweet memory module kit offers ultra low latencies of 3-4-3-9. In addition to low latencies, the TWIN2X2048-6400C3 features Enhanced Performance Profiles (EPP), a new open memory standard jointly developed by Corsair and NVIDIA designed to simplify the overclocking process, while ensuring platform and component compatibility.



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DESIGN, MANAGEMENT & COLLABORATION IN THE BUILT ENVIRONMENT

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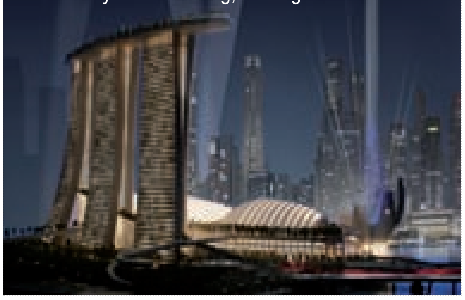
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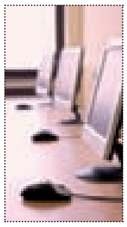
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Vol.30: Contents











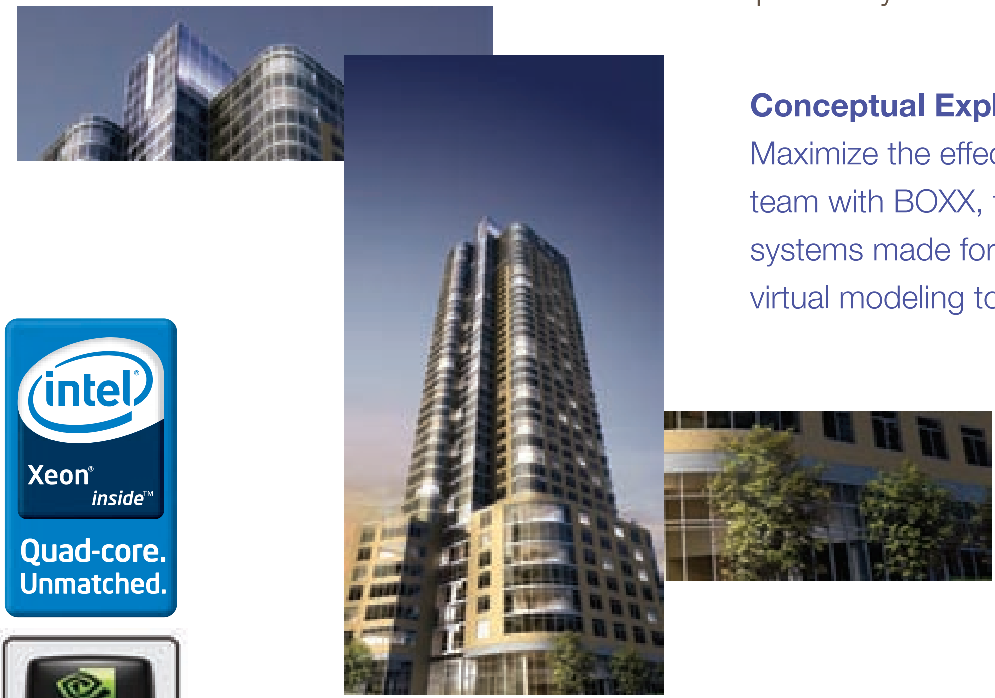




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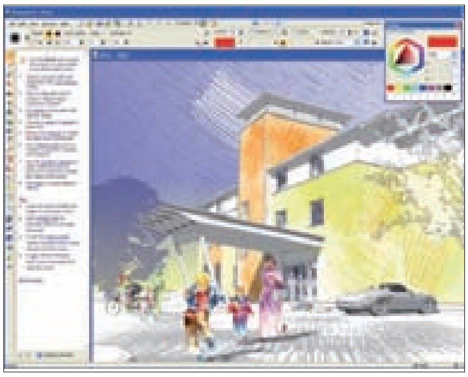
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New coat for Piranesi painting tool



Version 5 of Piranesi, the "3D painting" software from Informatix is soon to be released on Windows. Piranesi is a specialised 3D paint rendering system that enables users to start with a simple CAD model, and create photorealistic images, or soft "non-photorealistic" images with a hand-rendered look.

Piranesi 5 includes a number of user interface improvements, many of which are focussed on making tools easier to find and use. A new Help Assistant tells gives step by step guidance for each current tool, and the more advanced settings can be ignored or combined with other palettes as tabs on a single window to reduce screen space.

In terms of functionality, users can now quickly populate whole scenes with people or plants using the Multiple Cutout placement Tool, and Cutouts can be grouped and moved together, or modified with motion blur and silhouetting effects. There's a new Light tool for re-illuminating a scene with four types of light with adjustable strength and direction; a new Pencil tool for drawing lines and areas; and a Stamp tool for burning in raster images. You can export to Photoshop PSD files, or import SketchUp or 3DS Cutouts complete with textures.

As well as the enhancements to Piranesi itself, its sister program, Vedute, which is used for rendering models into Piranesi format, has new features for handling materials, textures and paper sizes, and generating 3D cutouts. There are also 200 new royalty-free cutout images of people, plants, and street furniture. ***www.informatix.co.uk***

Evolve unveils CAD managers survey 2007

Evolve Consultancy has announced the publication of the results of the UK CAD Managers Survey 2007. The report presents an independent picture of the CAD Manager's role in the UK AEC industry and highlights the common tasks those with a responsibility for CAD undertake, what is important to them, what is not, and the challenges faced.

Nigel Davies, founding partner of Evolve Consultancy, believes this regular snapshot is essential if the industry is to improve. "There are a number of significant actions the CAD industry needs to consider," says Nigel. "Our report demonstrates where the various parties are performing well - and not so well."

The report summarises the actions in five main areas: CAD Managers, Software, Support, CAD Standards, and Training. Findings include: the average company wastes up to £90,000 of its investment in CAD software every year in under-used support and licensing subscriptions, plus there is very little compliance checking or enforcement, despite most companies' CAD data forming part of their ISO accreditation. The full report is priced at £199 per copy.

www.evolve-consultancy.com* / *www.eatyourcad.com

Softcover launches OS independent scanner

Softcover, the publisher of Scan2CAD raster to vector conversion software, has been appointed UK distributor of the 1,200 x 600 dpi optical, Image Access WideTEK 36, which is claimed to be the first true network colour scanner for PCs, Macs and Unix systems.

The WideTEK is capable of scanning at high resolution in monochrome, greyscale or colour and is priced at £6,495 which includes a floorstand and professional internet and network-ready scan software. The Scan2Net software platform means that the scanner can plug diretly into a network with users utilising a standard web browser running on any PC or workstation to connect to the scanner. The scanner features a 2.8GHz Pentium 4-based Linux system with 2GB RAM, 1GB/s network interface and built in web server, mail server and FTP server.

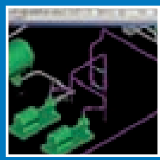
The WideTEK 36 scans A0 24-bit colour documents at: 600 x 600 (2.1 inch/sec), 300 x 300 dpi (4.2 inch/sec), 150 x 150 dpi, (8.4 inch/sec). These speeds include image cleanup, gamma correction, white and black point normalisation, sharpening, rotation, on-the-fly compression and output over the network. ***www.scanners4cad.com***

New online Revit facility to showcase users' work

A new online facility has been launched where architects and designers can not only showcase, but sell their own designs. ***revitfactory.com*** will specialise in providing construction information, specifically 3D components and 2D technical details produced using Autodesk Revit software. It will hold a global database of files, images and tutorials and allow users to purchase high quality building components.

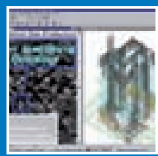
The site features tutorials on using Revit software, and it's hoped the paid incentive will encourage users to upload content to the site. Some standard components will be available for free and sharing items will help boost member's credibility and ratings. Other features of the website include a 'wanted' section, where users can request a particular component to be made for them, and a competition with a prize for the best monthly image.

Bentley releases AutoPipe XM Edition



Bentley Systems has released the XM Edition of Bentley AutoPipe, which allows structural engineers and piping designers to calculate piping code stresses, loads, and deflections under both static and dynamic loading conditions. According to Bentley, AutoPipe analyses systems of any complexity, with special features for buried pipeline analysis, wave loading, and built-in pipe/structure interaction among others. ***www.bentley.com***

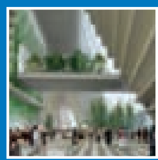
Cimmetry to hold inaugural user conference



Cimmetry Systems, a specialist in collaborative visualisation solutions, will be hosting the AutoVue Customer Cimm'posium 2007, Cimmetry's first ever annual user and partner conference in Montreal, Canada, on June 27-28, 2007, on the eve of Montreal's International Jazz Festival. The AutoVue Customer Cimm'posium 2007 will showcase Cimmetry's AutoVue solutions and integrations and provide ISV and VAR partners with technical and business information training.

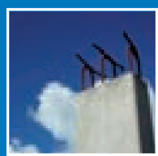
www.cimmetry.com/cimmposium

Robert McNeel unveils Rhino 4.0 NURBS modeller



Robert McNeel & Associates has officially released Rhino 4, the long awaited new version of the NURBS-based modeller. New features include improved modelling tools, new editing tools, interface enhancements, improved 2D drawing tools, and better mesh support. Meanwhile, turn to page 16 to read how Rhino was used for the design of Singapore's Marina Bay Sands Development. ***www.rhino3d.com***

BS 8110 incorporated into Ram Structural System



Version 11.1 of the RAM Structural System, Bentley's modelling, analysis, and design software for structural engineers, has been released. The new release features BS 8110 Concrete Design Requirements, which incorporates the British concrete beam and column design requirements to the RAM Structural System's RAM Concrete, adding to RAM's overall concrete design capabilities. Engineers can model, analyse, and design multistorey concrete structures, and then generate drawings, including beam and column schedules, directly from the program.

www.bentley.com

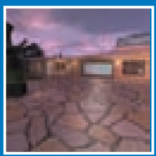
Acquisition gives Bentley boost in structural sector



Bentley Systems has acquired all operations of Kiwi Software, a leading provider of structural modelling, detailing, and fabrication software for industrial plants, buildings, and civil structures. Kiwi Software's flagship product line is ProSteel 3D and is used for structural steel detailing and fabrication. It supports multiple platforms, including AutoCAD, Inventor, and now MicroStation. The total number of ProSteel 3D users exceeds 6,000 says Bentley.

www.kiwisoft.de / www.bentley.com

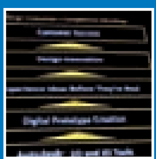
CABS takes on Max/Viz real time render engine



Computer Aided Business Systems (CABS) has been appointed the UK and Ireland reseller for Vertice Nova 5.8 a real time render engine for Autodesk VIZ and 3ds Max. The Nova real-time 3D engine allows users to interact with their designs inside a virtual environment. Application fields are numerous and include architecture, manufacturing, and virtual presentations, among others.

www.cabs-cad.com/vertice.htm

upFront.eZine publishes eBooks for AutoCAD 2008



upFront.eZine Publishing has released two new ebooks for Autodesk 2008. "What's New? AutoCAD 2008" is a 110-page PDF ebook which details changes in the latest release of Autodesk's flagship CAD software, while the 88 page "Tailoring AutoCAD CUI 2008" is for anyone who wants to customise the user interface of AutoCAD 2008 with its CUI command. Prices start at $13.20.

www.upfrontezine.com

3ds Max 9 users to receive productivity boost

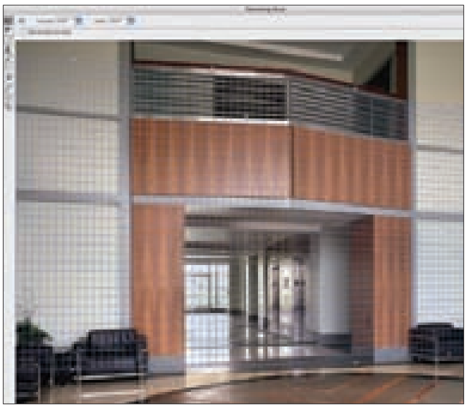


Autodesk has announced the 3ds Max 9 Extension: Productivity Booster for subscription customers, an add-on which is designed to enable users to work more efficiently with more than 30 productivity enhancements in the areas of animation and Biped, rendering, UI and usability. In addition, increased interoperability with AutoCAD 2008, AutoCAD Architecture 2008 and Revit Building 2008 is designed to help design visualisation customers share data with other architecture professionals more easily than before.

www.autodesk.com/3dsmax

Photoshop to import 3D models

Adobe has launched the long awaited Creative Suite CS3 group of products which includes the de facto standard image manipulation tool, Photoshop. However in an added twist, Adobe has brought out Photoshop CS3 Extended which adds Photoshop power to import 3D models as well as 2D. With new Smart Filters you can visualise different image effects, and



Smart Objects, which let you scale, rotate, and warp raster and vector graphics without altering the original pixel data. You can mix 2D and 3D, draw and paint, edit the perspective, measure, use layers and blend them.

The new version of Photoshop looks to be a great add-on for 3ds Max users as it can import 3DS files natively and could be used to just edit textures or build up a complete composited scene. For engineering users, Photoshop Extended offers integration with MATLAB. Users can pull image data from Photoshop Extended into MATLAB, and visualise results of MATLAB algorithms back in the software.

The move represents another attack by Adobe on the manufacturing software vendors who are looking to extend into technical doucmentation and image manipulation/rendering. Photoshop is already widely used in Architecture and when compared to Autodesk's Impression presentation rendering product, Photoshop appears to be one step ahead for dealing with 3D models. We will have a full review once we get a shipping copy.

www.adobe.com

Autodesk unveils 2008 AEC product family

Spring is here and Autodesk has delivered the yearly updates for its AEC design software portfolio and at the same time re-branded a number of key products to better align them with their parent application and market sector.

First off, AutoCAD 2008 includes a number of enhancements centred around the creation, editing and management of annotation scale, tables, text and leaders. A number of customer-driven improvements in functions ranging from drafting to presentation are also included.

Autodesk Architectural Desktop has been re-branded AutoCAD Architecture and now includes automatic scaling of drawing production and a new drawing compare feature. Autodesk Building Systems has become AutoCAD MEP (Mechanical Electrical Plumbing) and boasts international metric content and new automation of MEP systems design, layout and documentation.

AutoCAD Civil 3D 2008 features an enhanced multi user environment for work on larger, more complex projects, increased survey functionality and improved interoperability and migration for multiple data formats.

Autodesk has also delivered a number of updates to its Revit platform and re-branded Revit Building as Revit Architecture, Revit Systems as Revit MEP and delivered a new version of Revit Structure.

Revit Architecture 2008 delivers improved management of linked model information and improved DWF file specification support as well as better interoperability with Autodesk 3ds Max for design visualisation. Revit Architecture 2008 also delivers new features which are designed to enable sustainable design with analysis of materials, quantities, energy use and lighting.

Revit Structure 2008 features a range of new modelling tools for parametric structural trusses, warped structural slabs and curved beams, and includes improved interoperability with third-party analysis applications and a number of construction documentation enhancements.

Finally, Revit MEP 2008 now features an integrated building performance analysis for sustainable design through a direct link to the Integrated Environmental Solutions (IES), Virtual Environment. This provides reportable building analysis data including annual energy requirements, whole building carbon emission output, occupant satisfaction, day-lighting and thermal analysis capabilities.

www.autodesk.co.uk / www.iesve.com

Bentley Systems delivers visual collaboration client

Bentley Systems has unveiled ProjectWise Navigator, which it describes as the first visual collaboration client for design review and analysis plus work packaging that fully supports iterative workflows and reuse of all content throughout the process. This new desktop tool complements the ProjectWise system of collaboration servers

Commenting on the new release, Buddy Cleveland, senior vice president, Bentley Systems, said, "Many users complain that ordinary design review tools limit the use of their content through conversion prior to review and analysis. This results in a scattering of design snapshots that can't be put together and content reused.

"With ProjectWise Navigator, project team members can review and enrich original 2D and 3D design content assembled from their choice of hundreds of applications and file stores. This promotes full design collaboration within an iterative workflow and always cycles the enriched content back to the design team."

www.bentley.com





Image by: atelier SoA

Autodesk World Press Day

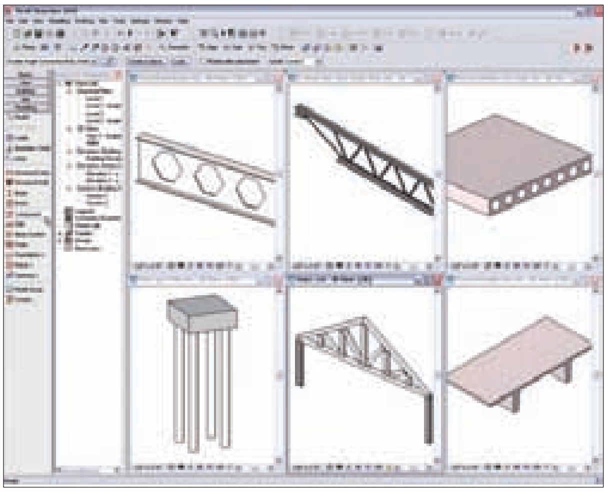
In light of amazing growth and a change in CEO, Autodesk is seeking to reinvent itself. The company's recent press day in San Francisco offered a chance to hear the Autodesk 3.0 pitch. Martyn Day reports.

Most engineers already have a view of Autodesk and its products, as AutoCAD is the de facto 2D CAD system and the majority of engineers were trained on, or at least used, AutoCAD at some point in their careers. The world's press, however, has had relatively little exposure to the design giant or its products and with a new CEO at the helm, the company has gone on a charm offensive to build on its consistent and dramatic growth over the last four years. Autodesk has outperformed any of its competitors and the world market for its products, growing in double digits, and appears to show little sign of abating. The company will have moved from a $1 billion company to nearly a $3 billion in under four years.

Autodesk's World Press day was held in San Francisco and gave an opportunity for Autodesk to cover company strategy, market dynamics and introduce the new range of 2008 products. On the first day the company's VPs and top Executives got to give their overviews of the market, while the second day offered a chance to drill down into the different division's (Building, MCAD etc.) product mix and market strategy. There was a break-out area where hands-on product demos could be given and a series of one-on-one meeting arranged.

The net result of this appeared to be that the presentation sessions were all well attended but very few went on to seek a hands on demo. It seems that Autodesk is interesting to the wider press as a business success and industry force to be reckoned with, rather than the real interest in the products' capabilities or developments thereof. I guess some fairly specialised knowledge is required to do this and I should feel relieved there's little competition!

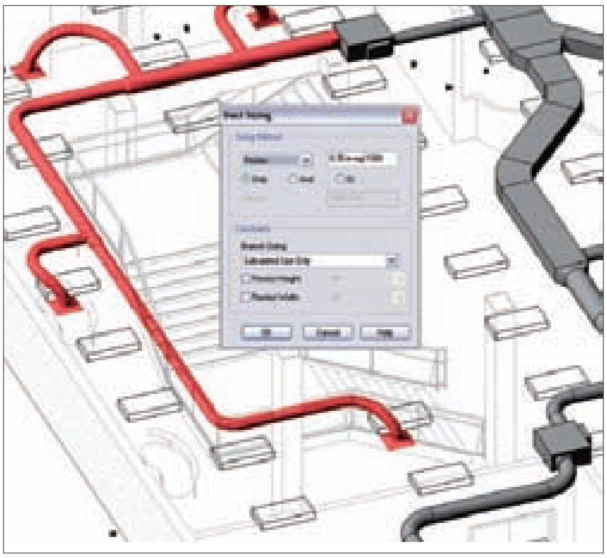
In general the strategy sessions were a repeat of last November's Autodesk University main stage presentations (which can be found online at www.aecmag.com) but this time were given with added confidence - and I have to say that the VP team, which has had a little rearrangement this year, are shaping up to be a fairly formidable group. The new Marketing VP, Chris Bradshaw, moved from successfully launching the Civils products and was formerly with Bass while at Buzzsaw (an Autodesk spin-off, online hosting company that Autodesk bought back inside). Then there's the very bright Jeff Kowalski, who takes the long vacant role of Chief Technology Officer (CTO), who worked with Bass at Ithaca software prior to Autodesk buying them many moons ago. In the last few years of Carol Bartz tenure as CEO, Bass concentrated on restructuring and re-energising product development at Autodesk, leading to an appetite to produce new products and innovation. Now Bass has stepped up to the plate, it's obvious that 'his kind of people' are taking more prominent roles within the company. I think in the past, Autodesk was more about spin, sales and branding. The new Autodesk is still inescapably very much about sales but there's now more substance backing this up, together with vision and an appetite to visit customers and see what problems need to be solved. There are still serious issues with the Autodesk customer experience that need to be addressed but it's hard for such a huge company to really get close to its customers and develop a sense of community. I can see that Autodesk is at least trying in these areas.



Revit Structure features a range of new modeling tools for parametric trusses, warped structural slabs, and curved beams.

Jeff Kowalski, CTO

As I've already really covered the keynote messages in previous articles, I thought it was worth relating the message of the new CTO, Jeff Kowalski. It was the first time I'd heard him present and he demonstrated some innovative technology.



The majority of UK content in Revit MEP is metricised imperial libraries, though this will change in future releases.

Kowalski explained how technology is changing the way we design. He saw his job as trying to understand customers, their range of skills, culture and processes and try to augment their design capabilities through digital tools. Kowalski stated that many design tool developers ignore the environment in which design tasks are carried out, and success is when the technology is transparent.

Rarely is the first design the right design, requiring prototype and analysis. This iterative process could be seen as a 'design conversation', and for too long this has required expertise in the field to understand and communicate important design information. Kowalski sees it as Autodesk's task to break down this wall and come up with new ways to have this conversation, to allow accurate design information to be delivered in many different ways, from industry experts to home owners.

The other key focus will be to drive intention into the design. So rather than just documenting creation then providing performance analysis, the CAD system will have some prior knowledge of the performance requirements of a design and will actively assist in meeting those requirements. This has been termed Functional Design by Autodesk and is one of the driving principles behind the company's MCAD products.

During his presentation, Kowalski demonstrated two interesting technologies that the company had in development - neither of which the company had any plans to commercialise but were fascinating as they were hardware-biased. One was a very large LCD screen that could be touch activated and manipulated by fingertip, improving man/machine interaction and the other was a multi-axis arm which had a screen attached to it, and as the display moved, the image moved around a virtual, rendered model accordingly. The last time Autodesk demonstrated any hardware to me it had developed was well over ten years ago and was a Virtual Reality system that occupied a whole room.

In a conversation after the event, Kowalski told me that his job is to unify the interface experiences of the many, many products that Autodesk has, as well as to further develop these multi-representational formats to liberate the data which is stuck inside its products.

AutoCAD 2008

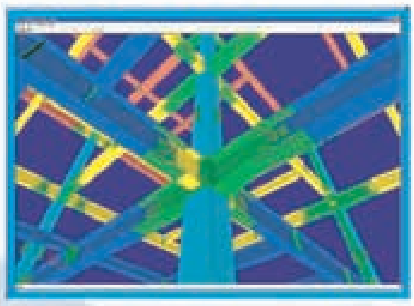
And so to products. It's that time of year again when Autodesk stops supporting one version of AutoCAD



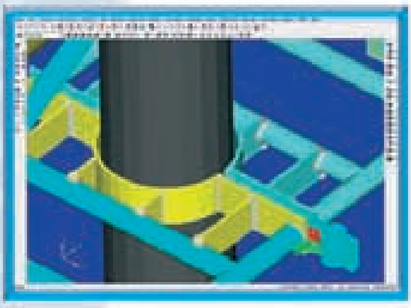
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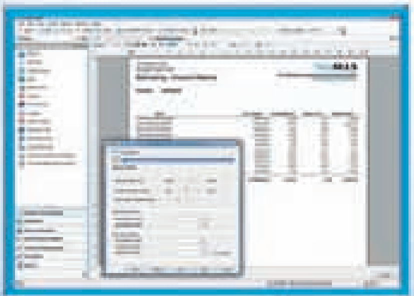
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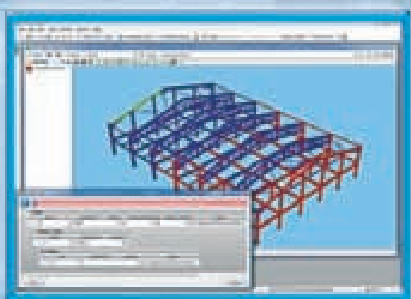
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AceCad SOFTWARE

and releases another. AutoCAD 2008 on paper actually looks quite dull. In the past when Autodesk has announced a release based around the AutoCAD User Group wish list, it has usually signified that the company has run out of ideas. The reality of this release is that there's actually a lot of useful stuff in it.

The key features of 2008 include: annotation improvements, layer properties per viewport, enhanced tables, enhanced MText, and multiple leaders. None of these sound too fantastic, like last year's massive boot to 3D capabilities, but what's been added has been done very well and we will review the changes in the next issue.

What has since occurred though is a broad sweep of price increases, for which you had better check with your dealer. It seems that Autodesk Subscription pricing has gone up about 30%, which is deeply shocking. Since its launch in the UK, I calculate that Subscription is up around 60%. With dealers now telling me that subscribers are regularly questioning the value they have received from subs. This is perhaps a price hike too far. We will report on this next month.

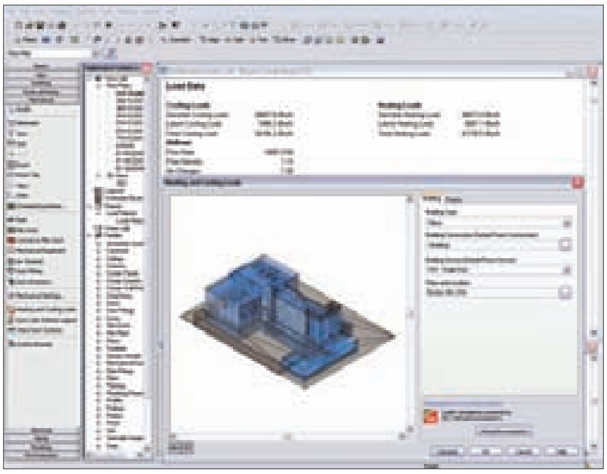
Building Products

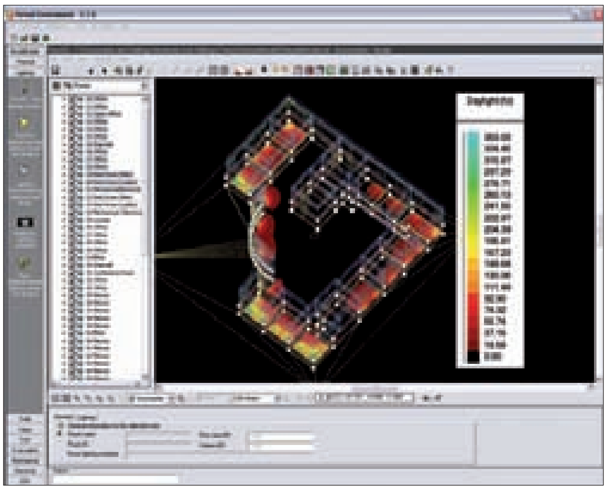
Autodesk's Building Division has re-organised and renamed a number of products, as well as getting a few more added to its roster. It all makes good sense.

AutoCAD Architecture 2008 was formerly known as Autodesk Architectural Desktop; AutoCAD MEP was formerly known as Autodesk Building Systems; and AutoCAD Civil 3D has been added to the Building division. On the Revit side of things to align all the products Autodesk has modified the names of several Revit-based applications. Revit Architecture 2008 used to be Revit Building, then there's Revit Structure 2008 and Revit MEP 2008 (which was formerly Revit Systems).

The move confirms that AutoCAD Architecture (ADT) is 2D and Revit is 3D. AutoCAD Architecture features: new annotation scaling, auto space generation, drawing compare, photometric lighting, Sun/Sky systems and procedural rendering. For Revit colour fills have been greatly improved, Revit Groups for repeating units or rooms of similar size has been introduced, and all instances can be edited at once. Dependent Views allows projects to be segmented across multiple sheet views, and Max and Viz can now import Revit 3D DWGs, maintaining materials and camera positions while moving back and fore. There are graphic overrides for object representations and new drag and drop file linking tools and clearer views of nested links. The 'Google Earth' plug-in has also been included in the shipping version.

In the past Revit development has been driven by flagship projects like the Freedom Tower and functionality has been added to help skyscrapers grow 'vertically'. For this release Autodesk has actually looked at the design of buildings over a larger area, such as schools and hospitals, where you have a series of large interconnected buildings. The 2008 Revit release features far better management for these types of projects, regardless of whether you're working on one large file or a number of separate files for individual buildings.



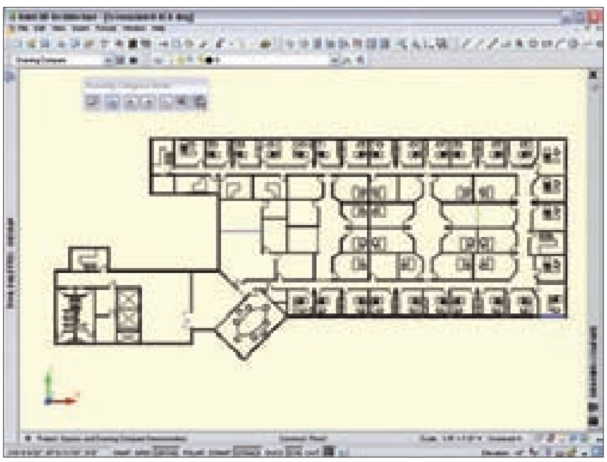


Revit MEP now includes heating and cooling calculations. **(top)** ***Revit MEP 2008 also links out to IES' <Virtual Environment> suite for lighting and solar calculations.*** **(bottom)**

The amount of development work that the Revit suite has had compared to AutoCAD Architecture appears significantly out of balance. In short, if you are thinking of moving to 3D go the Revit route. If you predominantly are 2D then stick with an AutoCAD environment. This isn't good news for people that invested in ADT and hoped to adopt a model-based process based on it.

Structural and MEP

At Autodesk, structural and building services engineering have historically been the poor cousins of architecture, but things are changing. For the 2008 releases there's been a lot of work done in those areas, some might say to the detriment of applications such as AutoCAD Architecture.



AutoCAD Architecture now features a drawing compare tool.

In line with Revit Architecture 2008, the ability to model non-standard components tops the list of enhancements. A powerful parametric structural truss generator - which was originally available in Revit Structure 4 as an example of what you can do with Revit's API - has now been incorporated into the core product. Curved beams (and openings in beams) are also new and warped structural slabs are now possible. In the past slabs had to be of a constant thickness; now you can easily incorporate multiple slopes for draining.

In terms of interoperability, Autodesk has been working with third party structural analysis developers to build stronger bi-directional links with Revit Structure, which are still fairly basic in some applications. In relation to this, with Autodesk's proposed acquisition of Robobat falling through late last year many had expected development work between the two companies to slow down. However, we've learned that the integration between Robot and Revit Structure is more advanced than ever. Finally on the structural side of things, there are still no plans for an 'AutoCAD Structural' - the future is certainly with Revit.

On the MEP (Mechanical Electrical Plumbing) front, AutoCAD MEP 2008 (formerly Autodesk Building Systems) is for documentation, while Revit MEP 2008 (formerly Revit Systems) is for systems information modelling - so says Autodesk marketing, at least. As Revit MEP is a much younger product, there's still a gap between the two, with AutoCAD MEP a more rounded product, though this is largely down to AutoCAD MEP's mature parts library. The majority of UK content in Revit MEP is metricised imperial libraries, though this will change in future releases and discussions are already underway with several manufacturers.

However, both products form part of the AutoCAD Revit MEP Suite, so anything you can't yet do in Revit MEP, you can do in AutoCAD MEP, though this will be at the expense of optimum interoperability with other Revit products.

Finally, in addition to standard analysis functionality, such as pipe sizing and duct sizing, Revit MEP now includes heating and cooling calculations, which is the result of a collaboration with Glasgow-based IES (Integrated Environmental Solutions). To extend this further into the realms of lighting and solar calculations, Revit MEP 2008 also links out to IES' <Virtual Environment> suite. This helps designers and engineers optimize for total building performance by taking into account physical, climatic and environmental factors, and analysing energy use, lighting and materials.

In the May/June edition of AEC Magazine we will be taking a closer look at the new Autodesk 2008 products and their functionality.

www.autodesk.co.uk

Interoperability: structural engineering

Structural design and engineering is an integral part of both Autodesk's and Bentley's BIM philosphy, but how effective are the two CAD giants, and the industry as a whole, in dealing with the issue of interoperability?

Question: The AEC software industry continues to push forward BIM (Building Information Modelling), but the fact remains that interoperability is still a major obstacle to achieving a smooth and efficient workflow between architectural, structural and building services design disciplines. Open standards such as IFC (Industry Foundation Classes) and CIS/2 are addressing these problems, but how effective are they at streamlining workflows in the structural engineering sector in particular and is the reality that 2D CAD file formats and hard copy drawings are here to stay?

Pete Baxter, Sales Director
Autodesk Building Solutions

First, it's important to remember that BIM is not a file format or data schema. The standards discussed here, such as IFCs or CIS/2 are mechanisms for moving data from one software application to another but are not themselves building information models. The co-ordinated, consistent and reliable information delivered by BIM, however, is the foundation for the value these standards deliver.

Having established this, I should mention that our partner Robobat created a CIS/2 export plug-in last year which is available for free download. Autodesk is continuing to work with Robobat on additional plug-ins to support industry standards.

Revit Architecture 2008 provides IFC export and import based on the International Alliance for Interoperability (IAI – of which Autodesk is a founding member) IFC 2x3 data exchange standard. Revit Structure supports the same IFCs with some additions to account for the structural systems objects in this application.

However, on the most basic level, the enhanced visualisation provided by a 3D model enables more effective communication between designers, consultants and sub-contractors. By removing the human variable of interpreting 2D documents into a 3D product, many misinterpretations are avoided and conflicts are recognised immediately.

As BIM methodologies advance, the use of the building information in other phases of the building lifecycle present themselves in cost and materials estimating, construction phasing, maintenance and operation. Having been the first to introduce BIM to the industry, Autodesk remains committed to providing the right tools, such as the Revit Platform, to enable its adoption.

Our experience, via our many customers who are using BIM, is that it enhances productivity for



all of the building team members. It also ensures better decision-making, production of high-quality construction documents, performance predictions, cost-estimating and construction planning and, eventually, for managing and operating the facility.

But, to answer the last part of the question about 2D formats, we are also convinced that there will also always be those who prefer to work with 2D and are committed to AutoCAD and DWG files.

However, current pressures on the industry to show huge improvements in efficiency and quality mean that only a radical solution will suffice. We continue to believe that this solution is BIM.

www.autodesk.com/revitstructure

Structural engineering is an essential part to Building Information Modelling (BIM), but there is still much to do to in order to optimise data flow between structural analysis, design, and documentation solutions.

Huw Roberts, Global Marketing Director
Bentley Systems

The building industry is certainly more fully utilising Building Information Modelling (BIM) methodologies and the enabling software solutions. As this trend continues to build momentum the importance of supporting the integration of information across the workflow and across the project team becomes ever more apparent. Conversely any obstacles to integrating these tools and information sources become even more frustrating as the values of integration become more apparent. 2D CAD and hard copy drawings will certainly be a major component of the process for years to come – however these are now best considered as the output of the process, reports from the design process, rather than the primary editing environment.

Bentley's structural solutions team is finding that some engineers do find that keeping up with new technology such as BIM can be overwhelming if the firm does not have a well considered technology plan. In addition, structural engineers are continually being asked to do more for their clients while at the same time facing a shortage of labour both in available engineers and CAD technicians. They are focused first and foremost on the production work that needs to occur every day.

The first step these firms can take to address these issues is to provide interoperability within their own structural engineering office by utilising integrated analysis, design, and documentation solutions that fit with the structural engineer's workflow. For example, modelling, analysing, designing and creating 2D drawings all from a single coordinated model is a huge time saver. This approach eliminates manual transfer of structural information from one program to another, drastically reduces the time required for coordinating design and construction documents and significantly reduces errors and duplication of effort. Perhaps the most immediately apparent benefit is that using integrated solutions allows engineers to easily keep up with the constant changes during the life of a project.

The second step firms can take is to ensure they engage with a reliable support team. The typical structural engineer's office may not have dedicated peers or technical staff available in-house to turn to for help. When questions arise and helpful answers are provided quickly, this saves engineers' time.

Finally, in addition to the internal benefits of the integrated office, firms should demand flexibility for interoperability with the technology solutions used by other disciplines. This allows them to provide a better level of service through enhanced coordination and comprehensive deliverables to clients and other consultants.

Ultimately, structural engineers should expect to work within their current workflow, with minimal re-entry of information for optimum productivity.

Bentley's structural team includes the RAM, STAAD, and ProSteel applications as well as Bentley's BIM solutions, serving small and large engineering companies. Bentley has more structural engineers on staff than any other software company, and provides the largest and most comprehensive portfolio of structural analysis, design documentation and detailing applications in the world. With these key players on your structural team you can win with greater collaboration, fewer errors, and improved business.

www.bentley.com/structural

One model too many?

A consistent, accurate, verifiable and uniform London model, accessible by all and managed by a single entity, has tremendous benefits for the whole industry - visualisation companies, architects and developers alike, says Gareth Munro, Managing Director, Designhive.





Why do we persist in developing our own independent models of London in a keeping-up-with-the-Joneses style race to better each other? There are at least four known London models, each owned and developed by separate visualisation companies, each with varying degrees of complexity and accuracy.

Almost certainly, whoever has the most detailed and accurate model of London has the competitive edge. The ability to create a 3D model of a building or other development and simply 'drop it' into an accurate model of London quickly and efficiently will inevitably win the support, backing and perhaps more importantly the business of architects and developers in the future.

However, the creation of multiple London models may provide competitive advantage to some and an instant win for those that 'have', but in the long-term does little to save time and cost for architects, developers and the wider industry.

It is firstly very difficult for an architect or developer to be absolutely certain that the London model used by their appointed visualisation company is the most current and accurate model available. For example, at this moment in time, online, there are four to five different models of Canary Wharf Tower and surrounding area. To be certain that the model selected is the most current and accurate is almost impossible when simultaneously other visualisation companies are adding to and enhancing alternative models.

It is also unlikely that any one visualisation company would maintain a complete model of London, but more likely to maintain key areas, Docklands or Greenwich for example. The knock on effect is a simple case of inefficient work duplication. For visualisation companies without access to a complete London model it is often necessary to create a model of a specific area from scratch, even though it is possible that area is already in existence with an alternative visualisation company. For the 'haves', this is competitive advantage at its best, for the 'have nots' this is a poor use of resources. For developers and architects, this is a costly and time consuming exercise.

Single London model

It may sound altruistic, but in the grand scheme of things, I believe that the world of architecture and design would benefit from a single London model freely accessible to all. It is no secret that Google Earth hosts SketchUp, a product that many might say is fast becoming a common software platform for architects and developers to use from the early stages of a project onwards. With this common platform, designers and architects could easily work together to develop a single London model, available for all to download and update. In this way, all developers and architects could quickly and easily develop a simple 3D model of their own buildings using SketchUp or any other modelling software such as Studio Max and drop it into the Google Earth London model, providing a single point of reference for the industry.

This would clearly be a step in the right direction, but it is also important that any single London model developed is the most accurate and up-to-date model available. The model must therefore be controlled and managed by a single entity that can ensure best practice and accuracy before allowing a 3D model building to be submitted to the London model.

Dr. Andrew Hudson-Smith, Research Fellow from the Centre for Advanced Spatial Analysis (CASA), part of London University, has recently launched an initiative that will drive forward the development of such a single accurate London model.

The model is within the boundaries of the M25, transferable to the Google Earth platform and fully supported by The London Mayors Office. It is designed for a number of purposes from pollution monitoring to a basis for location-based computer



games. However, it also has the potential to become the desired single point of reference for developers, architects and visualisation companies.

In practice, only architects, developers and other companies submitting plans in London have access to the model and then only with the permission of The Mayor of London's Office. Access will be granted on an ad hoc basis and per project. It is hoped that through CASA, The Mayors of London's Office and a stringent approach to submitting to the model, the UK will have for the first time, a single model of London accessible by all, accurate and up-to-date.

Dr. Andrew Hudson-Smith obviously supports our philosophy. "Our aim is to make a single accurate model of London freely available to all," he says. "The more people now contribute to this model the quicker it will grow, the more accurate it will become and the more benefit it will deliver to the entire industry.

"Designhive is one of the first visualisation companies to recognise the need for a single accurate London model and I now hope that other visualisation companies and key architects and developers from the industry will follow."

He adds, "My thanks also go to London Connects for helping to coordinate the model's development to date and assisting the roll out to the London Boroughs."

Benefit

It is now time for visualisation companies to come together, leave the competitive edge behind and begin contributing to Dr. Andrew Hudson-Smith's model, for the sake of the industry.

Architects and developers also have a roll to play. They must now push visualisation companies to ensure that any models developed are submitted to Dr Andrew Hudson-Smith at CASA and The Mayors Office to ensure that duplication of work, starting models from scratch and poor use of resources is a thing of the past.

Designhive's Gareth Munro believes a single London model will ultimately lead to projects getting getting through planning more quickly.

"If a single London model will ensure faster turnaround time on the creation of 3D buildings and verifiable images then ultimately it will help us to get through planning more quickly. A single London model is a concept that we fully support," says Andy Costa from London architectural practice, Jestico & Whiles.

Conclusion

New York has done it, with a great model that allows you to look down Fifth Avenue and fly around the Empire State Building. Let's not be left behind the times and work together to build the most accurate model, of any city on Google Earth. I believe that this is the way the industry is moving.

Research examples can be found on Dr Hudson-Smith's blog: www.digitalurban.blogspot.com

Contact **asmith@geog.ucl.ac.uk** to be involved with the London model.

www.designhive.co.uk

Grand designs

For the design of Singapore's Marina Bay Sands Development, Rhino, the NURBS-based modeller, was used to maintain the entire project in a single 3D master model. By Brett Duesing, Strategic Reach.

Sometimes, aesthetics and execution come together to pay off big. In May of 2006, the architectural firm of Moshe Safdie and Associates won the biggest design competition in its history. The city of Singapore had selected the firm's design proposal for its very first casino, the Marina Bay Sands integrated resort.

"Big" may be too small a word for the award. "This is a very large project. It's essentially a city," explains designer Jaron Lubin, who was part of the design process from the beginning. The Marina Bay Sands development will spread across a six million square-foot footprint, containing casinos and hotels, a 54,000-capacity convention centre, an Art/Science museum, a mall, two large theatres, and six signature restaurants. When the resort opens in 2009, the operation will employ an estimated 10,000 people. According to official reports, the budget for construction of the international entertainment mecca tops out around £2 billion.

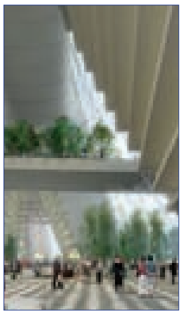
For any firm, winning a bid that big is a jackpot. Since the acceptance of the proposal, Moshe Safdie & Associates has doubled the size of its staff in its Somerville, Massachusetts office.

To ensure the on-time delivery of the massive submission and to keep track of all the design output, the team tried a somewhat different approach to project management. The designers' strategy was to maintain the entire project in a 3D master model.

"We started to develop our 3D models right away," Lubin explains. The project's general forms were modelled in a product design software called Rhinoceros. "Halfway through the competition phase, we had still maintained a coordinated 3D model. This allowed for an easy translation to 2D formats."

The Rhinoceros modeller is a favourite 3D design generator for industrial art projects large and small because of its powerful NURBS engine, which allows designers to easily create intricate curves, organic surfaces, and sculpted textures. Curvilinear elements like these can be seen as a unifying motif throughout the Marina Bay Sands interior and exterior designs.

For the team at Moshe Safdie & Associates, Rhino gave the additional advantage of flexible export, which could convert all the curved shapes faithfully to other 3D and CAD-related formats. "The key to using Rhino for us was that there was such an easy exchange between other software platforms, so we could have many modes of simultaneous production. This enabled our competition team to act more efficiently and create a higher quality product in the end," says Lubin.



Singapore's Marina Bay Sands development is essentially a small city containing casinos and hotels, a 54,000-capacity convention centre, an Art/Science museum, a mall, two large theatres, and six signature restaurants

From the 3D master model, sections of the design were exported to whichever software was most appropriate for the task: to develop further details, analyse the structures, and prepare the final visual presentation in the form of renderings and physical models.

For instance, the master model exported the basic linework for 2D base plans, sections, and elevations. From there, other designers could further develop details using AutoCAD, Adobe Illustrator and Photoshop.

The firm relied on several outside parties for consultation on structural engineering and wind simulation, and for professional rendering services



to create the final photorealistic images. Analysts received DXF exports of the master model to be used in their own 3D systems. The 3D model in its entirety was sent to the rendering and animation firms through a special NPower plugin, which converts 3D data from the Rhino modeller to 3ds Max.

While the outside firms rendered the Marina Bay Sands complex into the backdrop of the Singapore skyline, Moshe Safdie & Associates' in-house model shop cut all the scale model parts. Here the team extracted STL files to create 3D components through a Z Corp rapid prototyping printer and automated 3-axis CNC mill. The master model also exported 2D outlines that were made compatible with the model shop's laser cutter by utilising a multitude of widely available plug-ins and scripts.

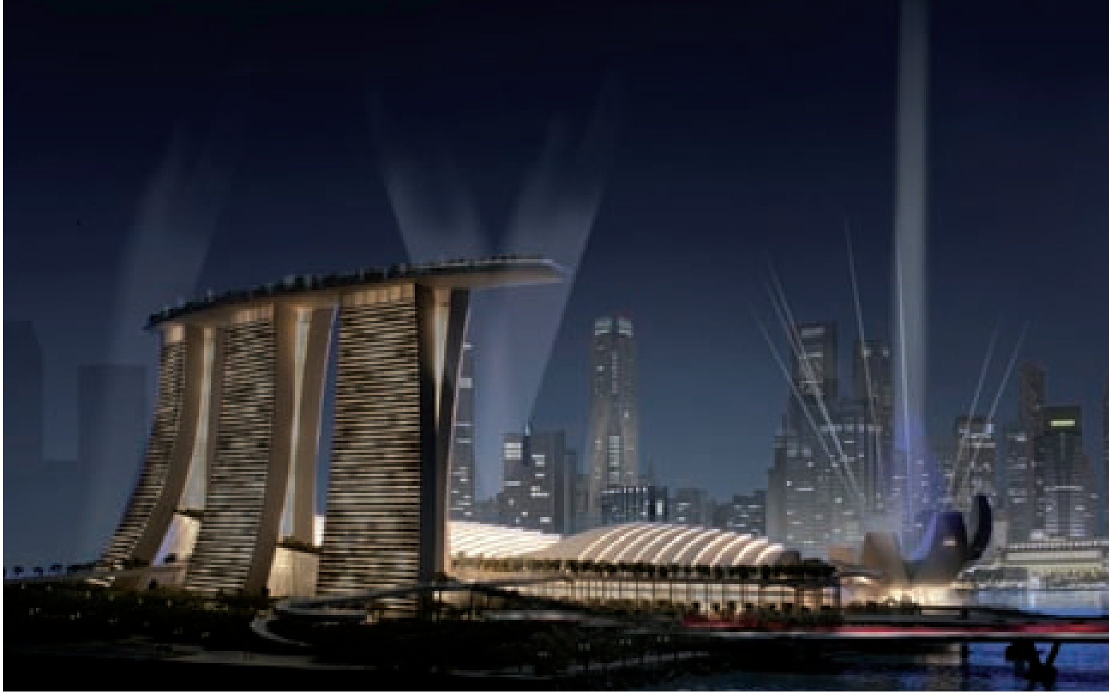
"The trend is that more people are using 3D programs like Rhino to link the 2D work from the 3D model so that there is less redundancy in re-drawing what has already been made," says Lubin. "The 3D work generates the 2D work, and vice versa. We tried to do that as much as possible on Marina Bay Sands. Given the fast track of the project and the amount of models that were required for the competition, we developed techniques to take advantage in this way. We reduced redundancy and kept things tightly managed through a central model."

The extra detail required for the contest submission led to a much more comprehensive initial design, one which pleased the Singapore officials to such a degree that they have accepted the results of the competition phase as the official guidelines for future development. "Because of the timeline, there will likely be minimal aesthetic changes between the submitted design and the final product," Lubin surmises.

After a brief celebration of on May 26, the day the architectural jackpot was announced, the staff of Moshe Safdie & Associates prepared itself for more work – about three years more work – to make the Marina Bay Sands a reality.

"Everybody has been really excited about this project and what it means for the office," says Lubin. "It has set a high standard for all the work that we're doing, and we've been very happy with the output."

www.rhino3D.com.



"The key to using Rhino for us was that there was such an easy exchange between other software platforms, so we could have many modes of simultaneous production."

About Moshe Safdie & Associates

With offices in Boston, Jerusalem, and Toronto, the award-winning Moshe Safdie & Associates have built signature structures all over the world that showcase the best in creative architectural design. To view the completed projects of the practice, visit: **www.msa**fdie.com

Making light work: part III

Following on from last month's look at Global Illumination with mental ray, the third part of Darren Brooker's four-part comparison of the interior lighting methods available within 3ds Max takes us through three-point lighting.

Our first two articles on the various interior lighting tools available within 3ds Max both looked at Global Illumination; first in context of the radiosity renderer, and then with mental ray. This month we'll leave GI algorithms behind and look at how to fake the look using the standard lights and a technique called three-point lighting.

The convention of three-point lighting is one that is firmly established in cinematography, and has become one of the main foundations for CG lighting too. One of the principal reasons for this is that the technique helps to emphasise three-dimensional forms within a scene using light.

Unsurprisingly, there are three lights involved in three-point lighting, and each has a specific function. Providing the main illumination in a scene, the key light is the dominant light, or the one that casts the most obvious shadows. The job of fill lights is to model the indirect lighting that is produced by direct light bouncing off an environment's surfaces. Helping to separate the subject from the background, the backlights give a scene depth.

We'll start by placing the key light, which represents sunlight coming through the windows to the right of the interior. Create a Target Direct light and once created right-click the Transform button to bring up the transform dialog and type in X:-13m, Y:-17m, Z:12m. Rename this light DirectKey01, then place the target at X:3m, Y:0m, Z:1m. Turn on Raytraced shadows, as these will need to penetrate the raytraced glass material, and give the light a Multiplier of 8.0.

If you render now you will see a largely black interior, because there is no indirect lighting component being calculated (see Figure 1). All you should see is the direct component of this one single light, as well as the reflective elements within the scene, such as the lighting fixtures, which also have a Self-Illuminated material applied. The next task would be to place the secondary key lights within each of these fittings. Rather than do this manually, choose File > Merge and select the 03threePointLightingCeilingSpots.max file. Select all the spotlights and choose OK.

Select any one of these lights and within the Modifier Panel take a look at the way the light is set up. Firstly, you can see that shadow maps are being used here rather than raytraced shadows, which is primarily because we don't want sharp shadows from



Figure 4. ***Three Point lighting: the final render, with results not dissimilar to those that can be achieved with radiosity rendering***

these lights. You should also notice that the light has Decay enabled and set to start at 2.0m, as the decay from interior light fittings is very noticeable, compared with sunlight which does not decay over the few metres it travels into a room. Additionally, the light has Far Attenuation set to Start and End at 2.0m and 8.0m.

If you render now you'll see that the ceiling lights now also cast light, but that again these only emit direct light and that we'll need to mimic the indirect light that would be bouncing off the surfaces of the interior (see Figure 2).

This is where fill lights come in. Fill lights are used to mimic this indirect lighting component and are coloured to match the surfaces they represent. It's a good idea to start with the most dominant surface in the scene in terms of indirect light, which in this case would be the floor. If you open the 03threePointLightingFill1.max file and select the FspotFill01 light, you can see that it is positioned underneath the floor, casting light back up into the scene and is coloured brown to mimic the light that would bounce off this surface. You can also see that the light has attenuation set to keep the illumination local and has no shadows, as this type of light would not cast noticeable shadows. Furthermore, the Specular component of the light has been turned off, as you can see in the Advanced Effects rollout, because bounced light does not consist of a specular component. Finally, you can see within the Spotlight Parameters rollout that the light is set up as rectangular, which is set to match the room's proportions, as you can see in the viewport labelled FspotFill01.

If you take a look at the remaining fill lights in this scene, you can see that these lights represent the indirect light from the primary wall surfaces. FspotFill02 models the light bouncing off the yellow wall to the left of the scene. FspotFill03 is coloured blue to represent the indirect light from the rear wall, whilst FspotFill04 models the light bouncing from the pools of direct light on the floor. Finally, FspotFill05 represents the light bouncing off the right-hand wall with the windows.

If you render now, you can see that our scene is really shaping up, when compared with any of our Global Illumination techniques from the two previous tutorials (see Figure 3). There are a couple of problems though, the area underneath the glass stairs does not look quite right and the shadows require attention. Furthermore, the rear-right portion of the room is also too dark.

Downloading the tutorial files

Visit **www.stinkypops.co.uk/aecPt03.html** to download a zipped archive of all the scene files and textures that you will need to complete this tutorial. Unzip them to your chosen location on your hard drive.

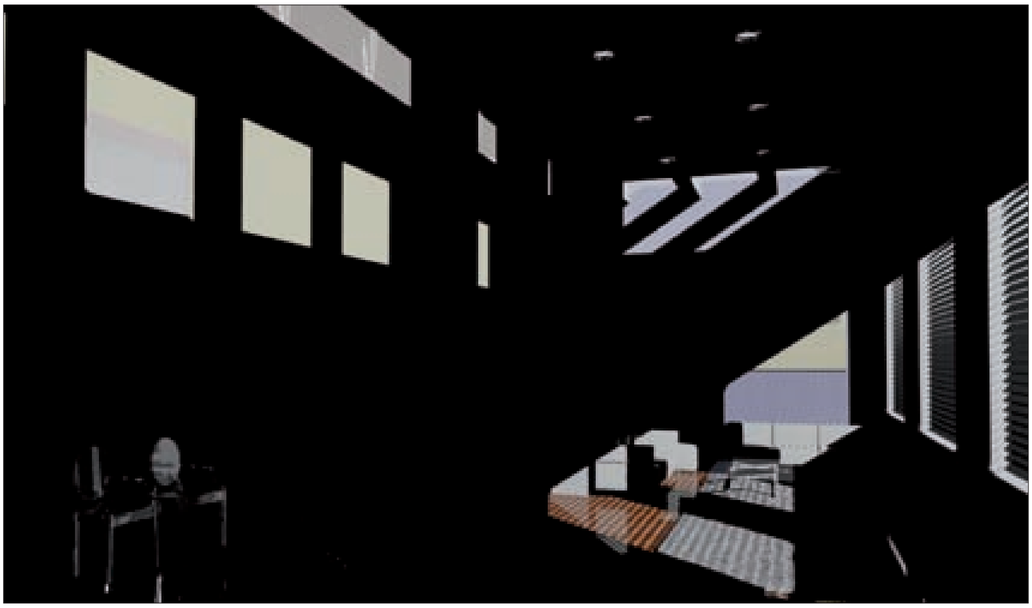


Figure 1. ***Rendering with primary key light, but because there is no indirect lighting component being calculated you will see a largely black interior,***



Figure 2. ***Rendering with primary and secondary key lights (ceiling lights). These now also cast light, but only emit direct light.***



Figure 3. ***By adding fill lights to mimic the indirect light that would be bouncing off the surfaces of the interior, the scene is really beginning to shape up. However, the area underneath the glass stairs does not look quite right and the shadows require attention. Furthermore, the rear-right portion of the room is also too dark.***

To correct the first of these issues, unhide the two lights in the scene and turn them both on. If you take a look at the parameters for these lights, you can see that one of them has a positive Multiplier value and has shadows turned on, whilst the other light has a negative value with no shadows. These two lights work in combination, with the negative Multiplier value of one light cancelling out the positive Multiplier value of the other light, leaving just the shadow rendered, as this is only on one light. This is a trick that can be very useful, particularly when you have a large area that needs illuminating, but the objects casting shadows are scattered around, like cacti in a desert environment for example. Rather than attempting to stretch your shadow map right across the environment, it's best to keep the shadow map (which is expensive in terms of memory at render time) tightly focused on the shadow casting object, making the rendering as efficient as possible.

To correct the second of these issues, open the 03threePointLightingFinished.max file and you will see that there is an Omni light in the affected corner of the room. With this light selected, in the top view you can see that it has been scaled along the length of the room to provide some fill light which has been stretched to accommodate the proportions of the room. This is a very handy technique for providing very localised fill light.

Other things to note about the final solution include the fact that there are extra lights that provide very subtle contact shadows between the tops of the columns and the ceiling. Once you have reached this stage of fill lighting, any further lighting will likely be refining your solution in very subtle increments, as these lights do. Furthermore, there are some things that are best cheated into materials rather than lights. In this final solution you can see that the top of the right-hand wall has been selectively darkened by putting two versions of the original diffuse map into a Mix map, with one of these versions darkened using its Output controls. Within the Mix map, a Gradient Ramp defines the mix between the two diffuse maps and with the gradient focused along the top of the wall, the wall is selectively darkened along this top edge, which mimics how it would be darkened here due to ambient occlusion. (see Figure 4)

As you can see, the result of all of these lights is a fairly complicated lighting solution, but one that has no sampling issues and that will consistently take the same time to render no matter whether objects are moving within it or not. For approaches to rendering based around radiosity or photon mapping, the solution would have to be recalculated every time something moved within the environment. Sometimes it's better to fake the radiosity look. However, the flipside of this is that when you are asked to change the look of the lighting scheme, the process of setting this up again can be equally as involved. However, knowing each of these approaches and how to get the best out of each is essential to using 3ds Max's extensive lighting tools in the most effective manner.

Three-point lighting

Positives:

1. Incredibly flexible method
2. Quick to render
3. Individual control of lights makes it perfect for stylised setups

Negatives:

1. Can be time consuming to set up
2. Relighting can become complicated

Tips & Tricks

- Start with your dominant key light and move onto other keys
- For fills, start with the dominant surfaces where light would bounce
- Add an ambient occlusion pass in mental ray using an Override Material
- Tint fill lights based on the surfaces the light they represent is bouncing off
- Turn off the specular component of your fill lights
- Backlight using a falloff map in the material's Self-Illumination slot .

Darren Brooker is a BAFTA award-winning lighting artist who has worked at many top UK studios. He works for Autodesk as a product specialist. His book, Essential CG Lighting Techniques with 3ds max, is published by Focal Press ***www.focalpress.com***



Train, train and train again

Training is often overlooked as a means of juggling the capital budget, but those who miss out are wasting great potential says David Payne of CADline.

The days when buying software meant opening a box are long gone. We no longer have "products" but "solutions". We talk about a "consultancy sell" rather than a straightforward transaction.

Or do we? Understandably, most architectural and building services firms still want to have something tangible to show for their financial outlay. Consequently, they are quite happy to spend money on hardware and software – but keep a firmer hand on the purse strings when it comes to training.

There are many reasons for this – but the main ones are surprisingly pedestrian. Training simply gets overlooked or is seen as an add-on. Leaving it out can be a way of juggling the capital budget – or to make the purchaser look as though they have achieved a better deal.

Ironically, as CAD software becomes more affordable, so the cost of training appears relatively more expensive. Smaller operations that can only just afford to upgrade or change solutions may see it as an unnecessary luxury and, instead, try to learn by trial and error.

Yet, we know that most users still only take advantage of around one third of their application's functionality. At a guess, I would say out of all the customers we see, at the moment only around 20 per cent are using the software to anywhere near its full capability.

With some software, this doesn't really matter – extra features tend to be for niche users or represent technology for technology's sake.

However, as CAD has evolved, vendors such as Autodesk and third-party developers have listened to users and refined their solutions accordingly to reflect real-world use and increasing demands such as the need to be first to market or to comply with new regulations. Vendors have acquired smaller companies with emerging technologies and made them affordable by adding them to mainstream products.

Today, users who neglect training are really missing out on functionality grown through the experience of others in a similar situation – and an excellent opportunity to gain ground on their competitors.

The good news is that attitudes are changing and the channel has a big role to play in ensuring we keep up the momentum. At CADline, we see customers fall into two camps. A substantial proportion of our customers opt for sufficient training as part of the main sale. A smaller number of clients choose to "drive" the software for a while before their training sessions, but remain committed to securing training nonetheless. Nevertheless, there remains a number of companies that do not effectively plan in or budget for their software training requirement at the time of purchase.



"As digital design, plus the need to analyse the performance of a building, becomes more prevalent, architects and engineers will increasingly look to outside experts to take an overview of workflow and processes and suggest a total solution rather than a single product."

Just as vendors are now listening more carefully to the market and adding only practical and usable functionality, so are resellers becoming more responsive to their customer's training needs and tailoring courses to match with these. For example, at CADline we log all support calls and use the problems discussed as a guide to what customers find puzzling. Training sessions become more user-driven and, therefore, more valuable.

Introducing new workflows

As digital design, plus the need to analyse the performance of a building, becomes more prevalent, architects and engineers will increasingly look to outside experts to take an overview of workflow and processes and suggest a total solution rather than a single product. Complete solutions tend to optimise software functionality and make the need for training more vital for achieving return on investment.

However, this approach presents a challenge. When an architect or building services engineer is using a solution day in, day out, lessons learnt in training are soon put to the test and ingrained. But when software is only used at a certain point in a building's development – for example, Cymap solution to help building services engineers achieve Part L compliancy – how do you ensure users retain their knowledge from one use to another?

The answer is that firms who opt for regular, ongoing, in-house training will reap the benefits. It means sessions can be designed to be task-specific and target key problem areas. When software is upgraded, new features can be put to use immediately and changing compliancy issues can be incorporated.

To complement the formal training, users also need to consider other methods of relaying specialist knowledge. For example, CDs to help jump-start latent knowledge and communicate tips and tricks and e-learning facilities for 24 hour access.

When training stops being the poor relation of a software implementation, users will begin to achieve faster ROI. Smarter firms will consider it as an integral factor in their investment and as vital as long-term support.

www.cadline.co.uk

Stride Treglown on the path to 3D

Moving on from using AutoCAD as an electronic drawing board, Stride Treglown has now embraced 3D and is already looking to a future where all project disciplines produce models in Revit from start to finish. By Richard Mitchell.

Established in 1953, Stride Treglown offers a multi-disciplinary service encompassing architecture, town planning, interior design, landscape architecture, building surveying, historic building conservation, inclusive design and disabled access auditing, BREEAM assessments and sustainable design advice, graphic design and all aspects of management.

Today the firm is one of the top 15 architectural practices in the UK. With nationwide offices in Bristol, London, Plymouth, Cardiff, Truro and Manchester, staff resources in excess of 200 and an ethic of continuous improvement in service and quality, it is easy to see why Stride Treglown is leading the way with its use of Autodesk Revit technology. However the practice's route to Revit starts some twenty years ago.

The CAD route

In the early 1980s the CAD industry started to blossom and, realising the potential benefits that CAD could bring, Stride Treglown chose to adopt AutoCAD technology. Within a short time a number of significant benefits were noticed which made an enormous difference to the working methods of the company.

Bob Whittington, Managing Director, Stride Treglown, explains, "Almost overnight CAD technology transformed the way we worked. We took projects from the drawing board to a computer and realised significant benefits. We were able to complete projects much faster by cutting at least 30 percent of the man-hours from a job, drawings became more accurate and changes could be made more quickly. Not only did it change the way we worked but made us much more competitive."

Having utilised AutoCAD for many years with much success, Stride Treglown, being rather visionary, saw the opportunity to move its CAD technology forward. Bob Whittington says, "For us, AutoCAD was just an electronic drawing board and what we really wanted was a more effective method of downstreaming data to make better use of our designs."

The concept of an industry-specific solution was considered and when the potential benefits were realised, a number of packages including Autodesk's Architectural Desktop and Revit (then made by Revit Inc) were explored. Following trials of a number of different solutions, the company decided on purchasing object-based technology and took on Architectural Desktop due to its compatibility with AutoCAD. After adopting ADT with limited success, Stride Treglown concluded that while ADT simply did not meet their requirements, the decision to go for object-based technology was indeed correct. At this point the company looked at purchasing Revit.

"When we were looking for software to replace ADT, Revit was an obvious choice," says Bob Whittington. "Being a specific architectural package, it had the ability to draw walls, floors, etc. as opposed to simply drawing line-work. Revit again advanced our design work and got rid of a lot of the normal CAD tasks such as line styles, line type scales, layers etc. It just appeared a much more efficient way of working."



Initially, Revit was rolled out to the company's Bristol office - to a mixed reaction.

Implementing Revit

According to Bob, trying to implement Revit was quite tricky at first. "From some parties there was quite a bit of resistance, mainly from those who were AutoCAD users. We had a lot of highly experienced people who felt that by switching to a new package, they would lose their years of AutoCAD knowledge and product understanding and possibly their value to the organisation.

"Once we commenced a training programme we found that the transition from AutoCAD to Revit was a reasonably smooth one and that the learning curve was not too steep; so we saw an almost immediate return on our investment. Since its introduction into the organisation we have provided all of the support in-house and with a couple of Revit evangelists really absorbing themselves in the product they have been able to deal with queries and technical issues as and when they have arisen."

Over a number of years and software releases Stride Treglown has rolled-out Revit Technology to a number of its regional offices including Revit Building 9.1 to its Cardiff office (Stride Treglown Davies) last year.

For Stride Treglown Davies, Revit was first utilised last year when the practice was commissioned to work on the design for the University of Wales' Caerleon Campus, within an extremely tight time-scale. They





had just six weeks to complete drawings to RIBA Stage D for a £7m new faculty

"Given the tight timescales and the clients' requirements, Revit was essential for this project," says Bob. "One of key advantages of using Revit is the early route into 3D. From a starting point we were able to put together a concept in 3D to show to the client extremely quickly; this was better than using a 2D plan which does not always give the best perspective of a concept."

Pierre Wassenaar, a Senior Architect on the project adds, "With the Caerleon project, the other main requirement was the necessity to allow the client the ability to walk-through and approve the entire project. The ability to show a 3D model in Revit and give a perspective of the idea early on was absolutely essential to the success of the project."

One of the other key benefits Stride Treglown Davies discovered from Revit was the ability to make quick iterations to the design at any stage. According to Pierre, "Once we had shown the design to the client there were a number of changes to make to the design, some more significant than others. Within such a short time-scale it was vital to be able to make those changes quickly and illustrate their impact on the design. Using Revit's BIM (Building Information Modelling) technology we were able to make changes quickly and all elements of the design updated. We were even able to make changes live in Revit in front of the client!"



Stride Treglown Davies also found that Revit held a number of other advantages during the project. When creating the model, components of the design were split into two categories. Where the practice perceived that a component was only relevant to the project an in-place family was created within the model. Where it was perceived that at some point in the future a component might be used again on other projects, time was spent creating component families which could be added to Revit's catalogues and used in the future.

Survey data

In the past Stride Treglown Davies had found working with site survey data was complicated and not always particularly useful or accurate. In order to complete the Caerleon project on time it was vital that site survey data was accurate.

One significant advantage Stride Treglown Davies discovered from using Revit as opposed to Architectural Desktop or even AutoCAD was its site survey tools. By utilising these, site survey data was used to accurately position the model and even add features such as roads to complement the design.

"Using Revit's site survey tools we were able to receive survey data from the surveyor, import this as an AutoCAD DWG and then revise our model accordingly," says Pierre. "As the surveyor carried out more work, iterations to his data occurred, which ordinarily would have caused us potential problems. However, with Revit we were simply able to overwrite the original DWG and update the model. We have found that Revit has become the driver for accuracy in terms of site positioning against survey data. Not only site positioning but on the Caerleon project we used the data and Revit to place roads and pavements."

But Revit does not have the ability to draw roads, does it? One of the key factors to Stride Treglown Davies's success with Revit has been the firm's ability to innovate and think about things in a more creative way. Pierre explains, "Where we needed to illustrate roads and pavements we used the 'floor slabs' tool to build roads and pavements and inverted the slab edges to create kerbs. Whilst not necessarily a true representation of the roads it did allow us to give an even better perspective of the model to the client."

Having seen the continued benefit of Revit technology, Stride Treglown Davies is now looking for ways to push forward its work in Revit.

Bob Whittington says, "At the moment we probably have over a twenty projects running live in Revit across all our offices. We see Revit as a real advance in CAD. What we as a company would like to aim for is producing a whole project from start to finish in Revit, where all elements of the team are using the same platform; from us, the architects, right through to the surveyors, structural engineers and building services engineers. We are already looking at the benefits Revit Structure could bring to the organisation and with Revit Systems (Revit technology for building services engineers) to follow we're positive in the near future that aim may well be achieved. At the moment we are also looking for potential business partners utilising Revit Structure technology because we really do believe this is the way forward."

Russ Monrose, Corporate Account Manager of Excitech concludes, "The correct deployment and development of a new piece of technology like Revit is critical to the success of the Practice using it and also of the software.

"We have seen many practices slip back to the days of "electronic drawing boards" and then in the face of economic and business forces regret that they had not taken a more pragmatic course of action with the planning and deployment of that software.

"Stride Treglown has shown that with proper planning and determination the company is able to make significant savings in labour and therefore become more competitive in today's lean construction industry market place.

"As for Excitech's role we are pleased to be able to support Stride Treglown, work with them, learn with them and develop the business processes that contribute to that success and hopefully be able to pass this on to all of our clients.

www.excitech.co.uk



"One of key advantages of using Revit is the early route into 3D. From a starting point we were able to put together a concept in 3D to show to the client extremely quickly."

Bob Whittington, Managing Director, Stride Treglown

SketchUp 6

The take up of 3D in architectural practices has been slow to say the least. However, one application appears to have gained broad acceptance within the AEC market - and that is SketchUp. Martyn Day reports.

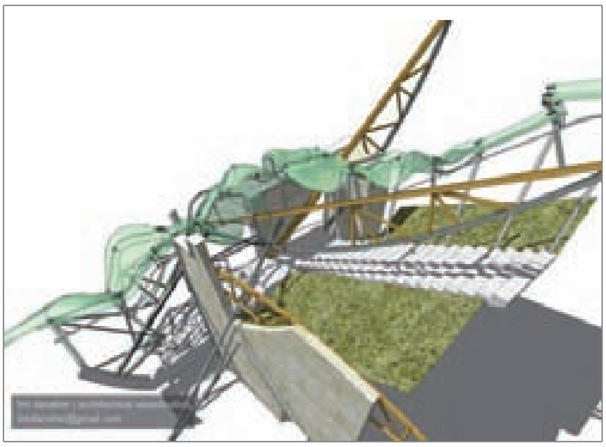
What is it that makes architects so 2D-centric? It's a question that most of the industry's software vendors have spent many years pondering, without really coming up with any concrete solutions. Despite making nearly all CAD programs 3D capable, the industry is solidly 2D. The only 3D product to get widely adopted is SketchUp, formerly @last software and now owned by Internet Behemoth, Google. While it used to sell for around $500, the change of ownership brought a swift reduction in price to $0! However, there is still a 'professional' version which is available for $495, but if you paid for SketchUp Pro in the past the update is free.

SketchUp's success was mainly due to low cost, ease of use and a pent up need for such tools. SketchUp is found everywhere from small one man bands to large global practices and it has inspired even some of the main CAD vendors to try and copy the feature set. However, the downside is that you still need to own and know how to drive the big expensive CAD seat. SketchUp is neat, cool and multiplatform, I can happily run it on my Mac or PC and it feels like the same application.

Fundamentally, SketchUp is about making shapes and extruding them, or punching holes in them and adding groups of geometry together to make faceted models. It's flexible enough to rough out most designs and it goes so far that you could make your model in-context with satellite data bitmaps, sun shadows and topology. If you want to get an idea across, quickly, it can be done in SketchUp. I reckon 30 minutes of tutorials and you will be ready to have a crack at modelling your first project.

Ease of use must have been one of the key reasons why Google purchased the company and with Google's methodology of giving away applications, SketchUp followed suit. It's now linked into Google Earth and the 3D Warehouse, a project where SketchUp is allowing anyone to build a 'Wiki' 3D world of buildings in Google Earth. While this is fun for kids and hobbyists it also benefits the serious architect as when you are talking Google Earth, it really is as in-context as you are virtually going to get.





New release

So with the launch of SketchUp 6, here's a run-down of key new features that are available in the basic free version:

Photo Match - provides a way to set up a camera view so that the modelling environment matches up with a photograph. It can be used to match an existing model with a background photo or one can start from scratch with a photo and then trace over it in 3D.

Watermarks - images placed in the background or foreground of the drawing area and span the entire area just as sky and ground. Watermarks could be used to simulate paper textures beneath a model or can be used to place logos and other graphics directly on the screen.

Sketchy Edges - an additional render capability to make the edges look as if they were drawn by hand.

Fog - you can now add atmospheric haze to a model with the new fog display.

3D Text Tool – it's easy to create signs and letters directly from simple outlines, filled surfaces and fully extruded 3D text using most fonts on your computer.

Speed - SketchUp is now faster, up to 5x faster depending on models and hardware.

Force Inference Directions – it's now easier to tell SketchUp exactly which direction you want using the arrow keys. Left = Red, Up & down = Blue, and Right = Green.

Two-Point Perspective - in SketchUp it's easy to recreate this classic style used by draftsmen and illustrators to create 3D renderings of buildings.

Native Support for 3D Warehouse and Google Earth - Interaction with the 3D Warehouse and Google Earth is built into Google SketchUp Pro 6 and no longer requires a plug-in.

The Professional SketchUp offers only one major new capability, called LayOut, which is a new suite of simple tools to place, arrange, title and annotate SketchUp models, photographs and other drawing elements to assemble presentation and documentation graphics for both print and screen. This is ideal for presentations or creating technical pubs. SketchUp really needed this utility as you always had to take SketchUp views to other packages to create presentation-quality graphics. Now SketchUp extends beyond just geometry and means you can present and reuse the geometry you have already created. You also need SketchUp Pro if you want to: Export 3D models or 2D vector images, or email support.

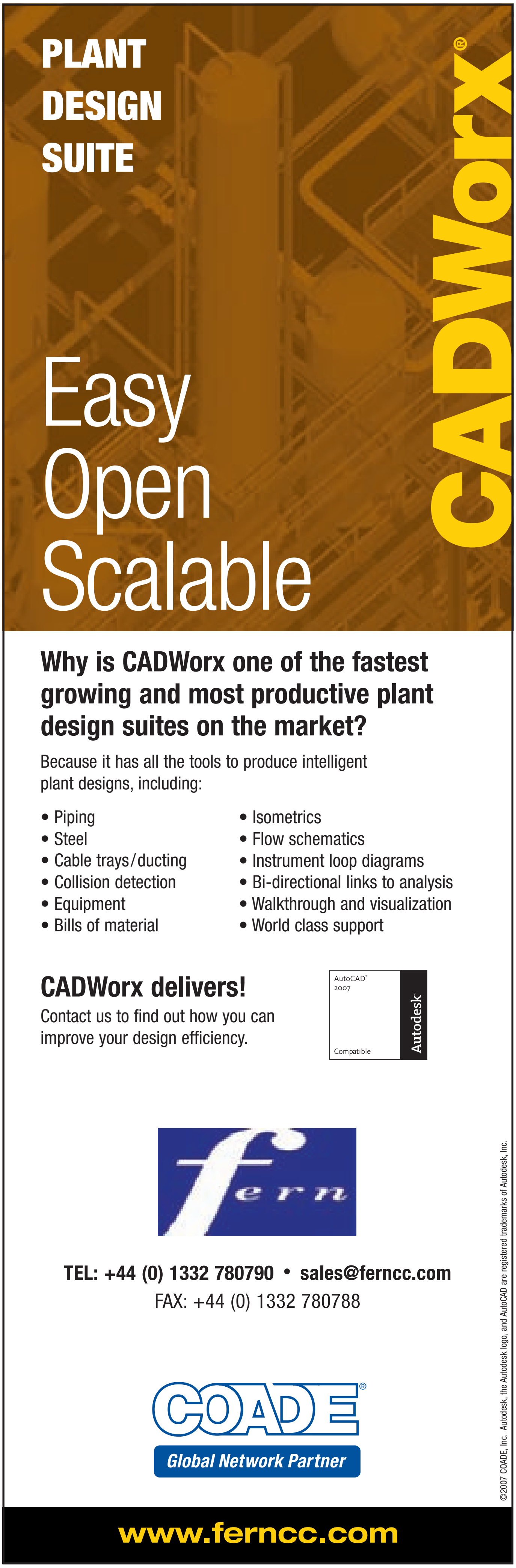
Conclusion

SketchUp development continues to be on target despite moving from a program that needed to sell copies to survive to being an almost free give away. The LayOut feature is well worth paying for if you want to extend your usage of the product but the free version will suffice for most of your modelling needs, just how good does it get? There's little excuse for Architects to not have this tool in-house and on every architect's machine. Once you play with SketchUp it's damn addictive and you will soon be using it for everything from home furniture layouts to designing skyscrapers.

www.sketchup.com




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Five steps to better project delivery

Confused by project management technology? Russell Henley of Deltek gives some tips on what to look out for before you make your investment.

Thousands of UK AEC projects were delivered on time and to budget last year. Sadly though, it is the handful of high-profile developments that went badly awry that are remembered.

Bad news sells – and reputations are fragile. Consequently, many AEC firms are now recognising that they must go the extra mile to avoid projects getting out of hand and are considering investing in one of the many project management IT solutions currently on the market.

However, making a decision on which one to choose isn't straightforward and it's easy to end up with a solution that doesn't quite fit the way you work. So, here are five points to consider:

1. Project – or enterprise? Or both?

There's project management software and then there's software that manages projects. Some solutions only allow users to record, store and share data. Others are more proactive and encompass the end-to-end project process from resourcing to billing.

A solution can manage projects in isolation or as part of your entire operation. The best have been developed for the entire project-focused enterprise. Check your chosen vendor understands how both the AEC industry and all project-focused organisations work.

2. Integrated control

Integrating enterprise functions with project activities can really help solve complex management and operational challenges. For example The Manchester-based engineeering services provider, the Wilde Group, was looking for a new system to help manage its growth across its four different companies. However, it had to go through a rigorous market research programme of at least fifteen different software packages before it found one that integrated both accounting and project control systems.

It found that most account packages focused on the financial accounts with possibly a small project module tacked on. However, it was actually more important to concentrate on the project accounts.

Once again, choosing an enterprise system designed for project focused organisations was the solution – and now the Wilde Group's system not only combines the two, but also provides integral CRM and resource planning.

"Using a single, centralised database, our new solution will provide seamless workflow across our whole enterprise, providing critical real-time project data to our multiple locations. We anticipate that access to this timely, accurate data will ultimately increase our cash flow and help to expand our business," says David Wilde, chairman.

3. Singular and central

You need a certain piece of information for a client meeting in a hurry. But to find it involves looking in a variety of systems and files as there is no way to generate the data automatically. The answer is a single, centralised database which keeps all project, resourcing, accounting and even HR information and which can integrate the data where necessary.

However, notice I say centralised and not modular. If your company is expanding rapidly, or want to make a staged investment, a modular solution may at first appear the best option. However, often with this type of system, the data is held in separate compartments.

If you make a change in one, you will need to go across the system and make changes everywhere. Also, if a system is modular in approach and modular in installation, each time new functionality is added, you may have to go through the whole upheaval of integration.





"Bad news sells – and reputations are fragile. Consequently, many AEC firms are now recognising that they must go the extra mile to avoid projects getting out of hand"

The best solutions hold all information on a single centralised database and further functions are activated using a code, as required. This will allow a seamless workflow across the entire organisation and also make it straightforward to build on the system without further integration as and when it is necessary.

4. Easy access to real-time, visual information

A web-based system which can be accessed from PCs and networked laptops with no other software needed is a must if staff in your organisation are always travelling, work on-site or from home. But, the best new solutions also offer the option of a mobile applications suite, which means they can enter timesheets and expense reports from PDAs and laptops onsite when not connected to the central database. This results in faster billing and better cash-flow.

However, perhaps the best feature of the latest systems is their ability to provide real-time information which enables an almost instant response when alarm bells start to ring. The faster you can get to a problem the easier it will be to solve – and, in some cases, the client need never know.

Some solutions now on the market even present this current information visually to allow fast analysis of large amounts of project information. These can examine key metrics in the context of other business drivers such as current and future market opportunities. They also enable fast "on-the-fly" comparisons, slicing and dicing of data, look at the aggregate view of a project or drill down into specific groups of projects by a range of criteria.

This functionality provides an excellent way to grab headline information quickly – just before meeting the client, for example, or before a key internal meeting.

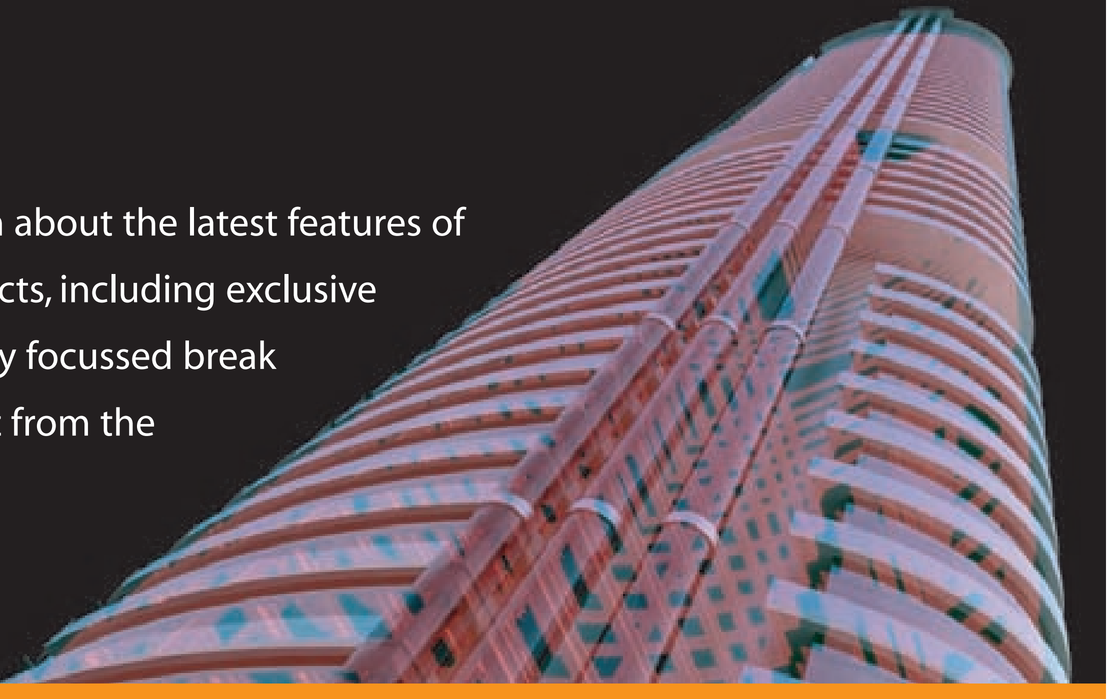
5. Look out for hidden costs

Finally, many buyers don't budget enough for installation and configuration. It's often quoted that for every £1 worth of software, you need to allow between £2 - £5 for installation and configuration. Bear this in mind – but also consider that there are now solutions on the market that are far easier to install so only work out at around £1 for £1.

Bearing these five points in mind should help cut through the confusion of investing in a new solution. And making sure your projects are only hit the headlines for all the right reasons.

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- **19th June 2007**
  Copthorne Hotel & Resort, Effingham Park, London Gatwick
- **21st June 2007**
  St Mary's Stadium, Southampton Football Club, Southampton

> AGENDA

Time	Building & Infrastructure Session	Manufacturing Session
9.30-10.00	Refreshments & Registration	
10.00-10.05	Welcome	
10.05-10.20	Introduction to CADline and Mice Solutions	
10.20-11.05	AutoCAD 2008	
11.05-11.25	Refreshments	
11.25-12.10	AutoCAD Civil 3D 2008 AutoCAD Map 3D 2008	AutoCAD Mechanical 2008
12.10-12.45	AutoCAD Architecture 2008	AutoCAD Electrical 2008
12.45-1.45	Lunch	Lunch
1.45-2.30	CADline Part L Compliancy Solution	Autodesk Inventor Suite 2008
2.30-3.15	Revit Solution	Autodesk Inventor Professional 2008
3.15-3.35	Refreshments	Refreshments
3.35-4.05	Revit Solution	Tips & Tricks
4.05-4.35	Autodesk 3ds Max 9 and Autodesk Maya 8.5	
4.35-4.45	Summary and Close	

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Océ Openhouse 2007

Imagine a gigantic exhibition hall crammed full of huge printers of every description and you've got Océ Openhouse, but this year it was a complementary software solution that caught the eye. Greg Corke reports.

Océ's annual Openhouse event has to be seen to be believed. Held at the company's vast German headquarters in Poing near Munich, the five day event is Europe's largest annual digital print fair, featuring everything from book production to giant display graphics.

Hands on demonstrations of all the latest technologies are central to the event and it is refreshing to see a company happy to share with customers not only products that are shipping now, but those that are set to be introduced over the course of the year. It is a very relaxed affair, interspersed with fine food, excellent German beer, and 'interesting' entertainment in the form of string quartets, theatrical presentations and catwalk shows.

Despite regularly drawing crowds of 5,000 over its five days, the event seems to emit less noise pollution year on year, perhaps a testament to Océ's advances in engineering for improved acoustics, driven by a broad industry trend for de-centralised printing.

AEC Magazine's area of interest is of course in wide format, and Openhouse 2007 delivered some interesting additions to the company's ever expanding printer and scanning portfolio.

Océ TDS700

Taking centre stage this year was the TDS700, the latest addition to the company's productive Technical Documentation System family. The TDS700 is a flexible mid-volume monochrome system that prints, copies and scans with a huge variety of different hardware and software configurations, including optional colour scanning. The system is driven by Océ's third generation Power Logic controller and boasts an impressive print throughput of 4.7 A0s/min, but Océ was keen to point out that having a fast print engine is only one aspect in overall print speed.

Productivity is also a critical factor and the system features concurrent printing and scanning, instant on (so there is no waiting for the system to warm up) and the ability to sustain this level of print speed even when changing one of its rolls (up to a maximum of six).

Software also plays a critical role and the TDS700 can be coupled with a diverse range of complementary software tools including the Océ Account Center, which allocates printing, copying and scanning costs to the appropriate department or client and Océ Print Exec for optimising the entire technical document printing process. In the UK, Océ also offers the Digital Distribution Manager (DDM), which streamlines and automates the distribution and issue management of technical documents.



The software advantage

Building on this strong foundation of software, Océ used Openhouse to launch a brand new product, Print Exec Department. There are two main ways of printing large format documents: direct from the CAD application (Windows Print Drivers or dedicated CAD drivers, such as AutoCAD HDI) or a job submission tool for printing sets of drawings. The latter is ideal for users such as project managers who often do not have direct access to the appropriate CAD application.

Océ Print Exec Department not only enables these non-CAD users to print documents with ease, but print to virtually any printer, large or small format, regardless of brand including HP's popular DesignJet 105X and 4X00 large format colour inkjets.

With Print Exec Department print jobs can be automatically routed to the most cost efficient printer or queue, each of which has pre-defined, centrally controlled settings. Queues can be programmed for a variety of print speeds, paper sizes or media types and can also be restricted for use by specific individuals. For example, the system could be set up so only certain users can send jobs to a printer with photo quality paper.

Oce's TDS700, the latest addition to the company's Technical Documentation System family, is a mid-volume monochrome print system, which can be transformed into flexible scan/copy solution with a number of optional upgrades.



"With the development of innovative products like Print Exec Department engineering customers are not only able to get the most out of their Océ print investment but to optimise and manage the entire departmental print workflow regardless of brand"

The software can also be integrated with the Océ Account Center for accurate job costing and features such as stamps, banner pages to separate jobs and job tracking, which are all included as standard.

With the intricacies of printing files such as AutoCAD DWG, Oce's Print Exec Department job submission tool cannot be used to print from all Windows applications and in this case printing needs to be direct from the CAD application. This is delivered through a uniform interface and users still have access to key functionality including all of the centrally managed queues.

Of course, this is an industry wide issue and file formats such as Autodesk's DWF and PDF already provide the mechanism for non-technical users to view and print engineering documents.

Océ Print Exec Department provides direct support for both of these file formats and users can view, zoom, and pan around these documents (and in the case of DWF turn layers on/off) prior to printing. Océ's Power Logic controller automatically converts these files into a format that can be easily understood by a variety of printers.

Colour showcase

In addition to its huge range of monochrome wide format print systems, Océ also used Openhouse to showcase the latest additions to it CS family of wide format inkjets printers which it delivers through a partnership with Canon. The CS2124 (A1) and CS2136 (A0) are designed for the production of both standard engineering line drawings and full colour renderings and are targeted at workgroups.

Conclusion

A trip to Océ's Openhouse always throws up some exciting new developments in wide format printing. However, it is with the continual evolution of its comprehensive portfolio of complementary software products that Océ is pushing the boundaries in this sector. Océ's wide format TDS range has long been respected in wide format, but with the development of innovative products like Print Exec Department engineering customers are not only able to get the most out of their Océ print investment but to optimise and manage the entire departmental print workflow regardless of brand.

www.oce.com

Printing: Inkjet versus laser

In the large format print market the battle between inkjet and laser technologies continues to rage, but specialist print reseller, City and West End Solutions, believes inkjets are emerging as the number one contender.

In today's CAD, Engineering and reprographics market, now more than ever is there a need for accurate hard copy prints combined with speed, cost and ease of use. This demand has led to the battle of the heavyweights in large format printing; large format digital inkjet versus high-end laserjet. The choice of hardware, software and third party media is now so vast and developments in technology have progressed so far that confusion to the customer abounds and can cause not only frustration, but loss of money – ouch!

Specialist Value Added Reseller City and West End Solutions has been witness to the many changes in this market for over 30 years and is proud of the fact that it has rolled with the punches and is still providing solutions in large format print for its customers today. The company has strong views on the conflict for the title and why one in particular is emerging as the number one contender.



HP's DesignJet 4500 series is changing the way people think about wide format inkjet printers by not only adding performance, but bringing a suite of remote management tools to the table.

Round One

Doug Gilbertson, Managing Director of City & West End explains, "Historically digital inkjet and in particular, large format digital inkjet was perceived as being extremely expensive and difficult to operate, whereas this view has gradually been displaced and the reality is that large format inkjet printers are in essence the same as desktop inkjets – but bigger. The view was further advocated by the then use of LED laser printers which were the de facto standard and tied companies in by using 'click charge' contracts.

"The main developments in large format inkjet technology are not just the sexy product features like unattended printing or multiple remote printing that has made it the favourite of the CAD industry but colour, cost and control. Colour was a massive step forward. LEDs were limited in that amendments on building plans, for example, could not be immediately distinguished whereas on an inkjet all amendments could be colour coded. Looking past the obvious printing needs like the production of plans etc, there were also other big advantages. As markets got fiercer in the building trade, then securing contracts became paramount and being able to produce rendered images of the finished building, incorporating digital photos of the site and many other visual possibilities gave companies the WOW factor."

Large format inkjet has also outclassed the laserjet in terms of control now too. Traditionally the large format LED printer, usually of tank-like proportions, were housed in their own 'print rooms' in a central location, producing hundreds of copies which then had to be distributed by courier. The evolution of CAD and the Internet has meant that there are more printers in-house and even on-site resulting in less room for error when it comes to obtaining the latest plans as they can be downloaded and printed instantly.

The counter-punch

Leading manufacturers such as Hewlett Packard and Canon have designed large format inkjet printers to be as quick as the laserjets with the added advantage of colour, but have also kept the end-user in mind with regards to control. Other manufacturers such as Epson have also produced large format printers but the output is more photo-quality images as in the past they were so much better integrated with Mac environments and have not strayed far from this niche.

'Print management functionalities enable more control for IT or the departments running the printers as the hardware can calculate square metre production, ink usage and speed. Consequently production costs can be calculated and it has been found that large format printing is now cheaper than ever – and more accessible.' Doug Gilbertson continues, 'Unattended printing or Webaccess in HP language if you're using a HP large format printer, means that you can dial in via the server to the printer from anywhere, to send your job to print. Not only that, the printer can broadcast back to the user information such as current status, how much ink is left, printer errors or even if there is a paper jam. Technology has not yet advanced to enable the printer to change a roll of paper though – although with the Designjet 4500 you can have up to three rolls of different paper queued up and ready to print, simply by selecting the roll you want – just like a different paper tray!'

Scoring Hit

Further fancy footwork through the latest software can also enable the user to print simultaneously, globally if need be. An example could be illustrated by a book or record cover design being sent to 12 printers in 12 sites across the world and every single print would be identical and output fully controllable from a central location. To achieve this you would need to have compatible software and getting the correct one for your print needs is where solutions providers enter the ring.

Doug Gilbertson continues, 'Although the inkjet large format printers are easy to use having someone with specialist knowledge to help with installation, training and initial set up, ensures you get printing as soon as possible. Software can also be tailored in some cases to suit your specific business requirements.

In addition to the hardware, there is also a vast amount of media available for large format including custom profiled material and third party media. There is such an array out there it can be confusing and not cost effective if you end up using the wrong one.'

Although not a knock-out finish between laser and inkjet, it is clear that for cost, quality and speed, the prize-fighter is certainly inkjet in the Red Corner….

www.cwesolutions.co.uk

When do we adopt new technology?

Upgrading software and hardware can be a complex process that needs careful planning, but by putting it off you could be missing out on valuable functionality and performance, says Rob Jamieson.

Recently I have been visiting a lot of ISVs (Independent Software Vendors) for technical QBR (Quarterly Business Review) and events. Of course it's the ISV's job to sell new software updates and make you want them. This got me thinking about when these should be applied to your production pipeline.

2007 is going to be about change. There is change in the form of new hardware which has less focus on just increasing the clock speed of CPUs. This has led to diverting approaches by the ISVs to get the maximum out of their software for their customers. Hardware optimisation often falls in to second place because of the basic fact that most customers tend to want certain new features. Or they want a fix or tools to enable them to do something they couldn't do before in a shorter, and therefore cheaper, time frame.

Different ISVs produce updates at different times of the year and over different periods. If the customer is a large corporation then they are likely to have a large design project on the go and updating software half way through is never a popular idea. Smaller companies often have a shorter design period so changing design software can become a simple process. This means that a few years after a design software package is initially launched the customer base is at different revisions or even platforms. In a lot of cases this becomes quite a large headache to manage for ISVs so they want to get everybody to the latest release even if it's just to reduce the number of support issues on different revisions.

We all know that one day we will have to update our software otherwise we would all still be using AutoCAD v2 on MSDOS. But the big question is when? Some customers believe that they should do it at the last possible moment. i.e. when they are forced to. This can be when the ISV will make you buy a whole new version of the software rather than allowing a version to be upgraded or it could be when it's not going to be supported any more. I always think that leaving it to the last minute is a bad approach because you could have missed out on using new features or functions which would have benefited your company earlier.

Soap dodging

An example of this for me is the Sky+ satellite box. I was happy recording TV onto SVHS if I wanted to watch something while I was out, whereas my wife was pushing me to get Sky+, but I was worried that it would get filled up with too many soaps! After having Sky+ for a few weeks I realised that I never needed to watch "live" TV again. I could automatically record it, start half way through and fast forward all the adverts. Yes, the Sky box was full of soaps but a retro fitted bigger hard disk, soon sorted that out. Now it's changed the way I watch TV and I will upgrade to Sky HD when the price drops (early adopters generally pay more) when more content is transmitted.

So if you are an early adopter you will likely have some issues in whatever you buy but there is a good chance this might give you a competitive advantage. A simple example of this is 64-bit versions of ISV software, which allow you to create models of a size that you could not even build before, let alone produce the drawings.

One thing that is often forgotten is the fact that if you are an early adopter you can be of real value to the provider of the software or hardware. If you give feedback to the provider they can make a better product. It's just about impossible to QA every scenario, but by the very nature of workstations an update can then be provided and distributed. This is the reason a closed system such as software for aircraft instruments takes longer to develop. It's hard to load SP1 at 30,000 ft for example.

"My wife was pushing me to get Sky+, but I was worried that it would get filled up with too many soaps!"



Deployment strategy

So how would you deploy a new release of software? The first thing I do is use an offline server and workstation if possible. From your last backup load the server (always a good test to see if it works) then load the workstation with the current version mirroring your setup and apply the new version. Next, put a designer on the workstation for a day to see if it works as it should.

I understand that you might have licensing issues to resolve as well as the time to do it, but you can always ask your reseller or ISV to do it for you. This is all dependent on how confident you are that the update will work for you or how many changes have taken place in the software.

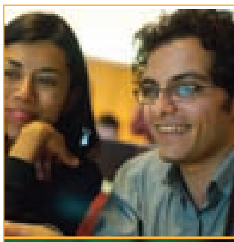
It's my job to be up to date with what software can do and how it's implemented on hardware. I hate it when an installer fails or some basic function does not work when trying new technologies. If I look at what I had ten years ago the QA has come a long way. The complexity has greatly increased but we have also got so used to working out of the box today it's quite good to step back and see how much things have advanced. Remember Windows 95 anybody? At the time it was a great leap. If you try and use it today and compare it to XP or Vista you marvel at how you managed to get any work done. Yes, new technology forces change and naturally we resist it but there is also a sub culture to have the latest or the perceived best right now.

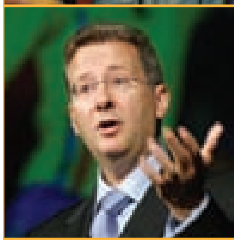
I like to be at the cutting edge just not the bleeding edge of technology. So I'll just go and delete a few more soaps, I've told my wife it's the autodelete function but I don't think she believes me. Come on Sky launch a soap autodeleter function, please….

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Robert Jamieson works for the hardware manufacturer AMD. The opinions in the article are not necessary the opinions of AMD as a company.

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